

To make SNAP healthier and save costs: Offer food incentives and disincentives

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Poor eating is a major cause of illness, especially from cardiometabolic conditions such as heart disease, type 2 diabetes, and obesity. These diseases generate large economic burdens for both government and

private insurance programs. For individuals and their families, additional burdens come in the form of personal illness, out-of-pocket costs, reduced quality of life, and a shortened lifespan. These diet-related diseases and costs disproportionately affect low-income families in the United States.

A new Food-PRICE study from researchers at the Friedman School of Nutrition Science and Policy at Tufts University and the Harvard T.H. Chan School of Public Health modeled the health effects and cost-effectiveness of three policy interventions to incentivize healthier eating in the Supplemental Nutrition Assistance Program (SNAP).

SNAP is the foremost U.S. program providing \$70 billion each year for low-wage working families, low-income seniors, and people with disabilities to purchase food. SNAP is reauthorized every five years as part of the omnibus Farm Bill, with the 2018 Farm Bill currently being crafted by Congress. SNAP currently includes relatively few incentives, disincentives, or restrictions to encourage healthier eating.

The study, published today in *PLOS Medicine*, estimated that \$6.77 billion to \$41.93 billion could be saved in [healthcare costs](#) over the model cohort's lifetime by incorporating specific food incentives, restrictions, and/or disincentives to improve food choices in SNAP. At the same time, up to 940,000 cardiovascular events and 146,600 diabetes cases could be prevented.

The three evaluated incentive/disincentive scenarios were:

- A 30 percent subsidy for fruits and vegetables (F&V), similar to the USDA FINI program currently available for some SNAP participants in certain states.
- A 30 percent F&V subsidy plus removal of sugar-sweetened beverages (SSBs) from the list of eligible purchases using SNAP

funds.

- A broader incentive/disincentive program including a 30 percent subsidy for F&V, nuts, whole grains, fish, and plant-based oils and a 30 percent disincentive for SSBs, junk food, and processed meats. This program, termed "SNAP-plus" by the researchers, incentivizes healthier intakes across a broader range of foods while preserving participant choice (i.e., not restricting any items from eligibility).

The impact on health outcomes, healthcare costs, and cost-effectiveness were evaluated over different time periods: 5 years, 10 years, 20 years, and lifetime. The research team estimated that, over the cohort's lifetime, the F&V incentive could prevent 303,900 cardiovascular events, add 649,000 quality-adjusted life-years (QALYs), and save \$6.77 billion in healthcare costs. Adding a SSB restriction increased the benefits to 797,900 fewer cardiovascular events, 2.11 million QALYs gained, and \$39.16 billion in healthcare savings.

The SNAP-plus incentive yielded the greatest corresponding gains:

- 940,000 fewer cardiovascular events;
- 2.47 million added QALYs; and
- \$41.93 billion healthcare savings.

Cost-effectiveness of each scenario was evaluated from a societal perspective (accounting for costs of implementing the program and healthcare costs) and from a government affordability perspective (further adding the direct costs of the food incentives or disincentives for everyone on SNAP, including children).

From a societal perspective, all three interventions were cost-saving, leading to societal savings of \$6.77 billion, \$39.16 billion, and \$41.93 billion over the cohort's lifetime.

From a government affordability perspective, the incentive for fruits and vegetables showed marginal cost-effectiveness at five years but was cost-effective over a lifetime (i.e., with a cost lower than the conventional healthcare threshold of \$150,000 per QALY gained). Adding the SSB restriction was cost-effective at 10 years, 20 years and lifetime.

In comparison, SNAP-plus was not only cost-effective but actually cost-saving—i.e., the government gained more dollars than it spent—with net cost-savings of \$10.16 billion at five years and \$63.33 billion over lifetime.

To evaluate the effects of the three incentive/disincentive protocols, the research team used a validated micro-simulation model ([CVD Predict](#)) to generate a sample representative of the U.S. adult SNAP population. The data included observations from the three most recent National Health and Nutrition Examination Surveys (NHANES 2009-2014), as well as data from national surveys, published sources, and meta-analyses that included demographics, food prices, diet-disease costs, policy costs and healthcare costs.

The research team constructed a data-driven simulation for the three incentive/disincentive policy interventions. Their analysis examined effects of such interventions on the number of [cardiovascular events](#), QALYs, program costs, healthcare savings, and cost-effectiveness for the three scenarios, compared to the outcomes under the current SNAP program.

"Systems level changes are often the most efficient and cost-effective way to gain health and reduce healthcare costs. Our findings suggest that modest incentives for fruits and vegetables could dramatically reduce the burden of disease for individuals and the healthcare costs for businesses and the government," said co-senior author Thomas Gaziano, M.D., M.Sc., who was also corresponding author on the CVD Predict modeling

study. He is an assistant professor in the department of health policy and management at Harvard T.H. Chan School of Public Health and director of the global cardiovascular health policy and prevention unit at Brigham and Women's Hospital.

"About one in seven Americans participate in SNAP, a crucial and effective program to reduce hunger. Our results suggest that SNAP can also be a powerful lever to improve nutrition, reduce major diseases, and lower [healthcare](#) spending," said corresponding and co-first author Dariush Mozaffarian, M.D., Dr.P.H., dean of the Friedman School of Nutrition Science and Policy at Tufts. "SNAP-plus, the combined food incentive/disincentive, showed the largest overall gains in health and cost-savings. Such a program could be implemented now using new technologies similar to those enjoyed in a growing number of U.S. worksite wellness and insurance programs."

More information: Mozaffarian, D., Liu, J., Sy, S., Huang, Y., Rehm, C., Lee, Y., Wilde, P., Abrahams-Gessel, S., de Souza Veiga Jardim, T., Gaziano, T., and Micha, R. (2018) Cost-effectiveness of financial incentives and disincentives for improving food purchases and health through the US Supplemental Nutrition Assistance Program (SNAP): A microsimulation study. *PLoS Med* 15(10): e1002661. doi.org/10.1371/journal.pmed.1002661

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